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**NAVY PUBLIC WORKS CENTER  
NORFOLK, VIRGINIA  
UTILITIES DEPARTMENT**

**STANDARD OPERATING PROCEDURE / JOB HAZARD ANALYSIS**

**TITLE**  
**COVERING ENERGIZED CIRCUIT WITH**  
**RUBBER PROTECTIVE EQUIPMENT**

**PROCEDURE NUMBER**  
**WC 624 HVE 100**

**SIGNED:** \_\_\_\_\_  
(DATE)

**APPROVED:** \_\_\_\_\_  
(DATE)

**SAFETY PROFESSIONAL:** \_\_\_\_\_  
(DATE)

**MANAGEMENT OFFICIAL:** \_\_\_\_\_  
(DATE)

**REVISION**

**A**

COVERING ENERGIZED CIRCUIT WITH  
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DISTRIBUTION

CODE	REV/DATE	REV/DATE	REV/DATE	REV/DATE	REV/DATE	REV/DATE	REV/DATE
601.C3							
620							
622							
610.E1							
622.3							

COVERING ENERGIZED CIRCUIT WITH  
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REVISIONS

REV	DESCRIPTION	SIGNATURE	DATE
A	Initial Issue.		

## COVERING ENERGIZED CIRCUIT WITH RUBBER PROTECTIVE EQUIPMENT

### **Purpose:**

Procedure to insulate an energized overhead circuit with insulating rubber goods.

### **Potential Energy Sources:**

1. Energized circuit being insulated.
2. Energized circuits in close proximity of work.
3. Deenergized circuits which are not included in the work and have not been grounded.

### **Tools and PPE:**

Tools: Bucket truck, rubber hoses, rubber blankets. PPE: Nomex coveralls, Nomex hood, insulating rubber gloves, insulating rubber sleeves, hard hat, safety shoes, work gloves, safety glasses, orange vest, safety harness, and back brace if required by back injury prevention and control program. The class of rubber gloves and sleeves will depend on the exposure voltage as per the following: Class 0 - up to 1,000 volts, Class 1 - up to 7,500 volts, Class 2 - up to 17,000 volts, Class 3 - up to 26,500 volts, Class 4 - up to 36,000 volts.

### **References:**

1. PWC Occupational Safety and Health Program Manual, PWCNORVAINST 5100.33E
2. SOP WC 624 HVE 001, Set Up and Secure Bucket/Auger Truck
3. Occupational Safety and Health Standards for General Industry (29 CFR PART 1910): Subpart I, Personnel Protective Equipment - 1910.137, Electrical Protective Equipment; Subpart R, Electrical Power Generation / Transmission / Distribution; Subpart S, Electrical
4. NFPA 70 E approach distances to exposed, energized, electrical conductors and circuit parts.
5. Electrical Transmission and Distribution Safety Manual, P-1060.
6. ASTM F 478-92 - Specification for In-Service Care Of Insulating Line Hoses and Covers.
7. ASTM F 479-93 - Specification for In-Service Care Of Insulating Blankets.
8. ASTM 496-93b - Specification for In-Service Care Of Insulating Covers, Gloves, and Sleeves.

### **Procedures:**

1. Set up bucket truck. Refer to SOP WC 624 HVE 001, Set Up and Secure Bucket/Auger truck for details. Be sure to ground truck if not sure a deenergized circuit has been properly grounded.
3. When operating a bucket truck the following safety rules will be followed.
  - a) Only an authorized person, one with a current government license to operate an aerial lift, will operate the bucket.
  - b) Do not use the bucket truck if winds exceed the truck manufacture's specified limit.
  - c) Do not perform energized work in wet weather.
  - d) Personnel in bucket will wear a safety harness with a lanyard attached to the boom or bucket.

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- e) Do not exceed the bucket's weight limitations.
  - f) Stand firmly on the floor of the bucket with both feet. Do not sit on the bucket's edge or use planks, ladders, or other such devices.
4. The following rules will apply to job.
- a) Bucket personnel will wear Nomex coveralls, safety glasses, safety shoes, hard hat, safety harness, insulating rubber gloves insulating rubber sleeves, and a back brace if required to wear one.
  - b) Personnel in the bucket will carry a hand line aloft with them.
  - c) Ground personnel will wear hard hats, safety shoes, work gloves, and safety glasses.
  - d) Ground personnel will wear orange vests if working adjacent to a road or in a parking lot.
  - e) Ground personnel not involved with the work will watch the personnel working aloft.
  - f) Ground personnel will stay clear of area underneath the bucket unless the work dictates.
  - g) If ground personnel are present, then at least one of them will have been trained to operate the bucket in an emergency situation where the bucket personnel are no longer able to operate the bucket controls.
5. Inspect the rubber protective equipment prior to each use.
- a) Rubber Blankets - Lay the blanket flat on any clean, dry surface. Start in one corner of the blanket, pull and roll the blanket, looking for signs of damage.
  - b) Line Hose, Cable End Caps, and Composition Equipment - Examine the outer surfaces of the item for signs of damage. Inspect the inside by opening and stretching the rubber equipment and looking for signs of damage.
  - c) Check the test date on the item. If the test date must be within one year of the current date.
  - d) Do not use a insulating rubber good if:
    - . there is a hole, tear, or puncture in it.
    - . there is evidence of ozone cutting or ozone checking.
    - . there is an embedded object in it.
    - . there is a texture change such as swelling, softening, hardening, sticky area, or an inelastic area.
    - . the test date is greater than one year from the current date.
- Note: Defective rubber good may be used provided they are repaired.
- . Rubber insulating line hose can be used in shorter lengths with the defective portion is cut off.
  - . Rubber insulating blankets may be repaired using a compatible patch that results in physical and electrical properties equal to those of the blanket. A repaired blanket must be retested prior to use.
  - . A rubber blanket may be salvaged by cutting away the defective area. The resulting, undamaged, blanket may not be smaller than

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24 inches(2 feet) X 24 inches(2 feet) square for a Class 1, 2, 3, 4,  
blanket.

6. Place the protective rubber equipment.
  - a) Place on one phase at a time.
  - b) Place on nearest and lowest conductor first, and then the next till all conductors to be insulated are covered.
  - c) At a minimum insulate an energized conductor to a point which is 3 feet outside the work area.
7. Remove the rubber goods one phase at a time, and in reverse order of how they were placed.

END